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09/751,082	12/28/2000	Klaus Rebhan	2054/415	5024

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GLENN PATENT GROUP
3475 EDISON WAY, SUITE L
MENLO PARK, CA 94025

EXAMINER

TRAN, KHANH C

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 12/31/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,082

Applicant(s)

REBHAN ET AL.

Examiner

Khanh Tran

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, and 8-19 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-2, 5, 8-10, 12-14, 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishifuji et al. U.S. Patent 6,061,389.

Regarding claim 1, Ishifuji et al. invention is directed to a frequency hopping communication system having a plurality of wireless mobile stations and at least one base station. Figure 4 a base station 300 including a base station ID generating circuit 222 that corresponds to an identification device as claimed in the instant application, a hopping pattern ID table 226, and a frequency hopping pattern table 221. The base station inherently includes a transmission and reception device for communicating with a mobile unit (the reception portion not shown in the figure). The base station ID generating circuit 222, in column 10, lines 5-14, outputs the base station identifier as an index. One hopping pattern identifier corresponding to said index is read out of the hopping pattern ID table 226, and is fed to the frequency hopping pattern table 221. As illustrates in figure 7B, in a frequency hopping sequence HFP2, as an example, each frequency is followed by a defined successor frequency, and each frequency hopping

Art Unit: 2631

sequence differs from other frequency hopping sequences in the frequency hopping pattern table 221. Furthermore, each frequency in a frequency hopping sequence for transmission/reception inherently has a defined time duration, and the frequency hopping sequence has a defined temporal sequence of all frequencies.

Regarding claim 2, as recited in claim 1, each base station identifier outputted from the base station ID generating circuit 222 corresponds to one hopping pattern identifier, which has a correspondent hopping pattern. By changing the base station identifier, the hopping pattern is changed correspondently. From figure 7B, each hopping pattern inherently includes all frequencies within a fixed frequency band.

Regarding claim 5, as recited in claim 1, the base station ID generating circuit 222, in column 10, lines 5-14, outputs the base station identifier as an index.

Regarding claim 8, as recited in claim 1, Ishifuji et al. discloses, in figure 4, column 10, lines 5-13 an arrangement of a base station according to the second embodiment. The base station ID generating circuit 222 outputs a base station identifier as an index. Then, one hopping pattern identifier corresponding to the base station identifier is read out of the hopping pattern ID table 226, and is fed to a frequency hopping pattern table 221 to generate a corresponding hopping pattern.

Regarding claim 9, Ishifuji et al. discloses, in figure 4, a mobile station 500 inherently including a transmission and reception unit for communication with a base station (the reception portion not shown in the figure). The features of the transmission/reception unit in the mobile unit have been addressed in claim 1 because of similar features with the transmission/reception unit of the base station. The hopping

pattern ID table 526, and the frequency hopping pattern table 521 constitute a storage facility as claimed in the application. When the mobile station 500 as shown in figure 5 receives a frame (shown in figure 6) transmitted by the base station 300, the microprocessor 113 extracts a base station identifier from the base station ID field 710. The base station identifier is set to a base station ID register 522. With similar method to the base station in claim 1, one hopping pattern identifier corresponding to the base station identifier is read out of the hopping pattern ID table 226, and is fed to the frequency hopping pattern table 221 to generate a corresponding hopping pattern. The base station ID register 522, the hopping control 531, and the search pattern table 530 constitute a synchronization device as claimed in the application. Disclosed in column 10, line 66 through column 11, line 12, as the mobile station 500 operates in synchronous to the base station, the hopping control 531 turns on a switch 532 to a search pattern table 530. The frequency of the local oscillation signal outputted from the synthesizer 111 is sequentially switched according to frequency search pattern for establishing synchronization.

Regarding claim 10, as shown in figure 6, the frame structure transmitted by the base station includes a base station ID 70, and information 707. Hence, during registration at the mobile station, the mobile station extracts a base station identifier from the base station ID field 710, and the base station identifier is set to a base station ID register 522. At the same time, the information 707 is received at the mobile unit.

Regarding claim 12, as recited in claim 9, the microprocessor 113 extracts a base station identifier from the base station ID field 710. One hopping pattern identifier

corresponding to the base station identifier is read out of the hopping pattern ID table 226, and is fed to the frequency hopping pattern table 221 to generate a corresponding hopping pattern.

Regarding claim 13, said claim is directed to a communication network comprising a base station in claim 1 and a mobile unit in claim 9. Hence, the claim is rejected using combination of the rejection arguments of claims 1 and 9.

Regarding claim 14, figure 1 illustrates a synchronous network system including a base station 402, and mobile stations 407-1 407-2. Ishifuji et al. discloses in column 7, lines 26-36. The base station 402 located inside the cell and the cell itself has a pre-specified common frequency hopping pattern so that the base station 402 and the mobile stations 407 do hopping in synchronization for transmitting and receiving the signal with the same frequency hopping pattern. As shown in figure 7A and 7B, each base station has different base station identifier corresponding to different hopping pattern ID and different hopping pattern.

Regarding claim 16, said claim is directed to a method of operating a base station. Since claim 16 has similar scope as claim 1, claim 16 is rejected using similar rejection argument of claim 1.

Regarding claim 17, said claim is directed to a method of operating a mobile unit. Since claim 17 has similar scope as claim 9, claim 17 is rejected using similar rejection argument of claim 9.

Regarding claim 18, said claim is directed to a method of operating a base station as described in claim 16 and operating a mobile unit as described in claim 17.

Hence, the claim is rejected using combination of the rejection arguments of claims 16 and 17.

Regarding claim 19, the preamble of claim 18 has similar scopes with claims 1 and 9, therefore, the preamble is rejected using combination of the rejection arguments of claims 1 and 9. As disclosed in column 7, lines 26-36, the base station 402 located inside the cell and the cell itself has a pre-specified common frequency hopping pattern so that the base station 402 and the mobile stations 407 do hopping in synchronization for transmitting and receiving the signal with the same frequency hopping pattern. With that scenario, the frequency hopping pattern is known to both the base station and the mobile unit. When the mobile station 500 as shown in figure 5, receives a frame (shown in figure 6) transmitted by the base station 300, the microprocessor 113 extracts a base station identifier, which is set to a base station ID register 522. The frame transmitted by the base station corresponds to the step of communicating information about the identity of the base station. The base station ID register 522 stores the base station identifier corresponding to the base station. The foregoing process inherently activates the registration mode for the base station.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji et al. U.S. Patent 6,061,389 as applied to claim 1 and further in view of Souissi et al. U.S. Patent 5,809,059.

Regarding claim 3, Ishifuji et al. does not disclose in the invention the operating frequency range is one of the ISM bands whose utilization is specified by national regulations. Nevertheless, Souissi invention discloses, in column 3, lines 7-19, a method for assigning frequency hopping patterns to subscriber units operating over the ISM band and preferably utilizing frequency hopping spread spectrum modulation for multiple access. As well known in the art, the principle of frequency hopping operation is the same regardless of frequency bands; therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Ishifuji et al. frequency hopping communication system could be easily modified to operate on one of the ISM bands as taught in Souissi invention.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji et al. U.S. Patent 6,061,389 as applied to claim 1 and further in view of Dicker et al. U.S. Patent 6,625,466 B1.

Regarding claim 4, Ishifuji et al. do not specifically disclose the base station is constructed using an OSI layer model with the base station constructed in such a way it can work as claimed in the instant application according to the DECT standard. However, Ishifuji et al. discloses in the summary of the invention column 2, lines 58-65 that the invention provides a MAC frame structure suited to Media Access Control

Art Unit: 2631

(MAC) process. Furthermore, Dicker et al. invention discloses, in another US Patent, a method for regulating transmitting power of a mobile station in which information are transmitted in different carrier frequencies with a frequency hopping method. The mobile station is operated on the DECT standard or a similar standard. Ishifuji et al. system provides a MAC frame structure suited to Media Access Control (MAC) process, but does not specifically disclose using OSI layer model. However, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Ishifuji et al. frequency hopping communication system could be easily implemented to utilize OSI layer model since MAC layer is lower than the data link layer and the network layer in an OSI layer model as well known in the art. Furthermore, Ishifuji et al. frequency hopping communication system could be configured to operate according to the DECT standard as Dicker et al. points out in another US Patent a mobile station operated on the DECT standard utilizing a frequency hopping method.

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji et al. U.S. Patent 6,061,389 and Dicker et al. U.S. Patent 6,625,466 B1 as applied to claim 1 and further in view of Leickel et al. U.S. Patent 6,632,264 B1.

Regarding claim 6, Ishifuji et al. does not disclose the base station ID generating circuit 222 including a RFPI number according to the DECT standard. Dicker et al. discloses a mobile station operated on the DECT standard utilizing a frequency hopping method, but does not specifically disclose a RFPI number according to the DECT standard. Leickel et al. discloses in column 5, lines 61-67 that the DECT standard

Art Unit: 2631

defines the ARI (Access Right Identifier) and the RPN (Radio Fixed Part Number). The RPN and the ARI together form the RFPI (Radio Fixed Part Identity). Leickel et al. further teaches that the handset needs this information in order to identify a base station. As pointed out above, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Ishifuji et al. frequency hopping communication system could be easily implemented to operate according to the DECT standard as taught by Dicker et al. in another US Patent, and to include the RFPI number as part of the base station identification portion as disclosed by Leickel et al..

Regarding claim 11, said claim is rejected using similar rejection argument of claim 6 since the operation of a base station and a mobile station is similar. Furthermore, figure 1 illustrates a network system including a base station 402, and mobile stations 407-1 407-2. As recited in claim 6, the handset needs the RFPI in order to identify a base station. Hence, it would have been apparent for one skilled in the art that the mobile unit receives the RFPI number along with the base station identifier transmitted by the base station. As disclosed in Leickel et al. invention, the RPN and the ARI together form the RFPI (Radio Fixed Part Identity). The RFPI inherently includes a FPN (Fixed Part Number).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji et al. U.S. Patent 6,061,389 as applied to claim 13.

Regarding claim 15, figure 1 illustrates a frequency hopping communication system having a plurality of wireless mobile stations and at least one base station.

Art Unit: 2631

Hence, it would have been obvious for one of ordinary skill in the art at the time the invention was made that the frequency hopping communication system could have more than one base station as implied in Ishifuji et al. teachings. Each base station has a different base station identifier corresponding to different hopping pattern.

Furthermore, as will be appreciated to one skilled in the art, each mobile unit could be configured to utilize a pre-specified common frequency hopping pattern associating with one base station so that the base station and the mobile stations do hopping in synchronization for transmitting and receiving the signal with the same frequency hopping pattern in the network. Such described network is an asynchronous network due to multiple base stations.

Allowable Subject Matter

6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Objections

7. Claim 13 is objected to because of the following informalities: in line 12, “.” should be changed to -- ; --. Appropriate correction is required.

Art Unit: 2631

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim U.S. Patent 5,818,885 discloses "Method for Minimizing Time to Establish Initial Synchronization between A Mobile Station and a Base Station in a Mobile Communication System".

Chanh et al. U.S. Patent 6,501,785 B1 discloses "Dynamic Frequency Hopping".

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 703-305-2384. The examiner can normally be reached on Tuesday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

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KHAI TRAN
PATENT EXAMINER